The effect of pretreatment with plant extract, nicotine and caffeine on sleeping time induced by pentobarbitone in mice

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Abstract:

Objective: To determine the effects of plant extract, nicotine and caffeine on the activities of the liver metabolizing-enzyme induced by pentobarbitone. Materials and Method: Seven groups of mice were pretreated with high doses of sample extracts (0.4 mg/g body weight sample extract, but nicotine at 0.1 mg/g body weight) and one control group was pretreated with saline. On day 5, pentobarbitone (0.005 ml of 8 mg/ml) was administered and the sleeping time was determined. The test was repeated but at low doses (0.1 mg/g body weight sample extract, but nicotine at 0.05mg/g body weight). Results: At high doses, bitter gourd, 'tempeh', nicotine, caffeine, nicotine+bitter gourd, nicotine+'tempeh' and nicotine+caffeine induced the activities of liver metabolizing enzyme significantly compared to control. At low doses, bitter gourd, nicotine, caffeine, nicotine+bitter gourd, nicotine+'tempeh' and nicotine+caffeine induced the enzyme but 'tempeh' did not. Conclusion: The findings suggest that bitter gourd, nicotine and caffeine act as enzyme inducers, but 'tempeh' only demonstrate this ability at high dose.

Keywords:

cytochrome P450, liver metabolizing-enzyme, plant extracts, enzyme inducer, nicotine, caffeine